

ARTHUR (R.)

ADDRESS

BY

ROBERT ARTHUR, M. D.

READ BEFORE THE

ANNUAL MEETING

OF THE

AMERICAN ACADEMY

OF

DENTAL SCIENCE,

HELD IN

BOSTON, SEPT. 25, 1876.



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*Mr. President and Gentlemen of the American Academy
of Dental Science:*

You have twice honored me with an invitation to deliver the usual address at the annual meeting of your Association. Last year a very untimely indisposition prevented me, not only from fulfilling my engagement with you, but put it out of my power to complete the address I had partly prepared, and of which I should otherwise, finding myself unable to be present personally, have sent you the manuscript. I can scarcely venture to hope that I shall be able to satisfy any expectation that could have led to a second invitation to perform the same service. I will, however, endeavor to do the best in my power to render the occasion, to some extent, a profitable one.

We are actively and earnestly engaged in a pursuit, gentlemen, which we well know to be concerned with important interests of humanity, and, if I am correct in my impression of the controlling motive which has led to the establishment of this organization, it is a desire to do what may be in your power toward the enlargement of the capabilities of this calling for the better accomplishment of its great objects. You make use of the term

"Dental Science," in designating your body, implying that the true pathway to development lies in the direction of something higher than its mere manual requirements. You intend it to be understood, I can but infer, that, while our profession, as is the case with general medicine, is eminently practical, it is also something more. It is to this higher aspect of dentistry that I propose to devote the few plain but earnest words I shall address to you to-day.

It is quite natural that those who are engaged in any pursuit, should make use of all proper means of giving to it the standing and credit before the community to which it is justly entitled. This is essential to its greatest efficiency, which is always augmented in proportion to the public respect it inspires. Self-interest, the satisfaction arising from the knowledge that while we are devoting our best powers to a worthy purpose, the service we render is estimated at something like its real value, our own present and prospective welfare and that of those dependent upon us, are, in addition to the more important one referred to, some of the incentives which render such an effort not only desirable, but, in certain degree imperative. Such an end can, of course, only be worthily or, indeed, successfully reached by devoting attention to the higher features of this calling, and by elevating its aims. Anything that can be said in relation to such purposes should and will always be interesting to those who have their accomplishment at heart.

The subject to which I propose to call your attention has so often been discussed, that I can scarcely hope to say anything especially original or novel in relation to it. It is a subject, however, which cannot be exhausted, and I have a strong feeling that the present is a period de-

manding from us a broad view of our profession. Dissatisfaction, among a large number of what we may justly class as some of our best men, with the present condition of dentistry has been, as you are aware, manifested on many occasions during several years past. A conviction prevails that its resources are greater than have yet been developed and that in order to make the advances which they believe to be within its range, its members must consider more earnestly than they have hitherto done, its higher capabilities, and not rest content to permit it to be limited to the present routine, which, it must be admitted, is, to a great extent, merely mechanical. While we are fully cognizant of the fact, and regard it with feelings of gratification and pride, that there are a large number of intelligent and cultivated gentlemen engaged in our profession, we are not so sure that they have done as much as lies in their power toward the study of dentistry as a science, but have been content to regard it as an art merely. We cannot conceal from ourselves the unpleasant truth that there are a great many — a large majority — who have no aspirations above this dead level, and who, losing no opportunity of thrusting themselves before the public, create a tone which must and which does affect injuriously the standing before the community of the profession itself. That from year to year — independently of many, who do not pretend to go through any regular course of instruction — a number of men nearly destitute of general education, and of but meagre professional acquirements, are thrown into our ranks by institutions which are careless of the high responsibilities they have assumed, and which are accepted by the public as representing the best elements of dentistry. You are aware, gentlemen, that this statement is not made from my own

impressions merely, but that it embodies the frequently expressed opinions of some of the best men in our ranks. It is highly gratifying to observe, too, that either this free expression of opinion or some other cause appears to have had the effect of inducing an effort, on the part of educational institutions, to correct the evil complained of, as has been manifested by the extension of the time devoted to the course of instruction. From some higher motive, I trust, your own Harvard Dental School has been a pioneer in this direction. It is to be hoped that other schools will follow an example so commendable, and advance beyond what has yet been attempted or proposed. It lies in the power of the truly earnest men of the dental profession to exert still greater influence in this direction.

A great deal has been said about the wonderful rapidity with which dentistry has grown up, in this country, into its present proportions within this century. How it has increased in numbers, and the manner in which it has developed from a mere trade, without any settled principles, into a scientific pursuit, has been the theme of many a florid oration. While not disposed to detract, in the slightest degree, from all the just satisfaction that may be derived from this source, I may be permitted to consider briefly the character of this progress and to inquire to what extent it deserves to be called scientific. By this I mean, to what extent general principles have been developed and applied in the pursuit of Dentistry.

We have certainly a more correct knowledge of dental histology. Great advances have been made in this department within the last fifty years. At that time, indeed, but little was known of the intimate structure of the teeth; but many laborious, careful and truly scientific

investigators have, through their splendid discoveries thrown a flood of light upon this subject. Within the period named the crudest and most erroneous notions of dental caries were entertained, strangely in discord with the means employed to arrest it. Our present views are certainly more rational; they are in stricter accordance with the observed phenomena and with the treatment pursued. But even with regard to dental caries, although the generally received theory appears to be correct, it is far from being established upon a strictly scientific basis. It has recently been urged, and the objections said to be based upon experiment that the theory of caries now generally entertained and which we have considered well-founded, if not entirely satisfactory, is the reverse of correct.

But the question now comes: Has our greater knowledge of the structure of the teeth and of the pathology of dental caries, led to any important changes in the management of the teeth in relation to this affection? This is a question of the very highest importance. All studies of structure, function and disease, so far as medicine is concerned, must be for the great end of curing disease. It is a general impression that dental caries is becoming more prevalent and more destructive with every generation, and seems to require more efficient treatment than that to which we now trust.

What is the treatment now generally depended upon? Is it not exactly the same as that of fifty years since? "Filling" carious cavities of the teeth with some substance capable of resisting the action of destructive agents, and excluding them from these cavities, is now, as then, the remedy applied, and, as I have elsewhere stated, the only remedy generally depended upon. In

corroboration of this statement, it will be found on examining the "History of Dentistry" recently prepared under the auspices of the "Academy," that no other means of combating dental caries receives more than a passing notice. Gold is now, as then, the material regarded as paramount in value, in all the essential qualities for the purpose, and the ability to use this material most dexterously constitutes now, as then, what is generally regarded as the highest qualification of a dentist. Great improvements, it is true, have been made in preparations of gold for this purpose, as also in instruments, appliances and methods of manipulating. But this has not in any respect altered the principle of treatment. Not only is this true, but gold is really not more effectively used for the purpose now, than it was by the best operators fifty years ago, although the improvements referred to have greatly facilitated its employment and added to the proportion of what are called good operators. Other materials have come into use, and are employed with advantage in certain cases, but none of them have supplanted gold.

This, then, is the position dentistry occupies at the present day. Dental caries is the disease it is the province of dentistry to combat. This disease or disorder, I need scarcely say, gives origin to dentistry. If it did not exist, or could be annihilated, dentistry would no longer be a vocation among men. We are obliged to admit, that while we understand somewhat better the nature of this affection, we have made no advances in its treatment, except in a mechanical way, for nearly a century.

To what extent, then, can the term *Scientific*, be applied to the advances made in dentistry in this country? Certainly, no original investigations except in a very lim-

ited degree have been made, relating to the microscopy of the teeth. Very nearly, if not quite all our knowledge of this subject has been derived from foreign sources. As I have already said we have advanced in our knowledge of dental pathology, I must give credit to our country for the first ideas on this subject now entertained; but even this advance was made a long time ago before, indeed, the discovery of the intimate structure of the teeth. But has the fact that the operation of filling teeth with any material as a means of arresting caries, except in cases where but little skill comparatively is demanded, is the result of neglect of measures, which, in most cases would have rendered such treatment unnecessary, made an impression in any degree adequate to its importance? The employment of gold for filling carious teeth involves all or nearly all the skill required by the dentist or "operator" of the present day, and we are compelled to take this as the basis of our professional standing. If, then, our professional *status* is to be based upon mere manual dexterity, it may be well to consider it in that aspect.

Taking this operation as a mechanical process, it must be admitted that it is comparatively of very inferior character. If no other considerations were associated with it, placing gold foil in a cavity so formed as to retain it when thrust in piece by piece, and when condensed sufficiently, polishing it elaborately, is no great mechanical feat. It requires attention to some preparatory measures to exclude the access of moisture and then a certain amount of patient labor will fully accomplish the object. Even with the ordinary difficulties attending this operation, on the living subject, it requires, especially with the present facilities, no high degree of manual skill. As compared with the many of the details of the thousand mechanical

occupations of a civilized community, the exercise of which require years of training and practice, this operation becomes, in the most difficult cases trivial, and in the greater number, insignificant. The mechanical acquirements of the average dentist of the present day would ensure his expulsion from any work-shop where he might attempt to render the simplest service, if he had no higher degree of mechanical proficiency than is necessary to fill teeth with gold.

I desire not to be misunderstood. I do not mean to detract from the value of the operation to which I am referring, and do not overlook the very important fact, that in many cases judgment, thought, skill, and other qualifications of a high character are essential. I mean that as a mere mechanical process, it is greatly exceeded in the requirements essential to the successful conduct of such a process, by a great many others which are in daily practice, and with regard to which no claim is made beyond their mere mechanical character.

I have on more than one occasion called attention to the fact that the highest positions in the dental profession are accorded to those who have acquired reputation as "operators," that is, as "pluggers of teeth." But, if we do not regard as more important, higher acquirements, how can we look for a more elevated position for dentistry than it now occupies? Mere manual ability may exist, to a great extent, independently of intellectual capacity or cultivation, and so long as manipulative dexterity fills the measure of accomplishments of a first-class dentist, we may give up any hope of the advancement and development of dentistry except in this direction.

It may well be asked, does dentistry resolve itself into this? Is this crude mechanical operation to continue in-

definitely to constitute the whole of the resources of dentistry to combat a destructive disorder which affects most injuriously the whole civilized world, and which depends upon causes involving very intricate and obscure physiological and pathological considerations? If you are content to remain in this position, I am unable to see how you can make any claim that dentistry is a scientific pursuit. It is difficult to see how you can demand any higher or more extended education, if this is to be all the use to be made of it. But may it not be asked again, whether, in this very nearly exclusive attention to this operation we are not neglecting the much higher features of dentistry, which look towards the advantages of prophylactic measures? It is this object which renders important a more thorough, general and medical education than is now considered necessary.

The importance of the earliest and most careful attention to the permanent teeth forces itself upon conscientious practitioners of dentistry, and yet, notwithstanding the admonitions of earnest men, this is now, as a general rule but carelessly given. And, in this connection, it becomes important that there should be a common understanding among practitioners of dentistry to enforce upon the public, so far as they have the ability, a full understanding of the importance of putting their children in the way of this attention.

If I may descend to particulars, I may ask: Do the mass of those who wish to render the best service in their power, seriously consider the fact that the superior incisors and canine teeth may, if timely attention be given to them, be preserved, with rare exceptions, no matter how much they may be predisposed to caries, without filling or disfigurement? This idea is not new, but it is not

brought into practice to the extent it deserves to be. We see, at the present day, numbers of cases of young women disfigured for life in consequence of neglect of this important precaution. Is the fact fully realized that, in the great majority of cases, from the very nature of the conditions present, caries commences on the proximate surfaces of the permanent teeth as soon as they are formed, and goes on, in its course of destruction, incessantly, until they are destroyed, or the disease is arrested by filling after it has been permitted to make great progress undisturbed? Yet this is a fact.

If this is true, is it not a matter of much greater importance that some means should be discovered of arresting this destructive disease in its incipiency, than to wait, supinely, until a great part of the substance of the teeth has been destroyed by caries, before any attempt is made to arrest it, the remedy then applicable being within the reach, peculiarly, of but a small part of the community?

I do not undertake to say how this may best be accomplished. I have already suggested one means in which after an experience, extending over many years I have undiminished confidence. It will not admit of dispute that the problem is one of great importance and will probably one day be solved. It is worth a great deal of labor to work out this problem as to how prophylaxis may be best applied in our speciality. What will prove most efficient in this way may be means or methods which have not up to the present time, come within the range of our researches. It may be that some agent will be discovered, which, applied locally, will effectually neutralize the power of destructive agents present in the mouth. Or some medicinal agents, acting through the general sys-

tem may be employed to change the character of the oral secretions, when they are discovered to be capable of producing dental caries. Or it may be that means may be employed, which will exert such an influence during the process of the formation of the teeth as to render them denser in structure and better capable of resisting the action of destructive agents.

It must be admitted that such inquiries as are indicated by these suggestions are in a higher plane than the perfection of the operation of plugging carious teeth. Such investigations as would be likely to lead to such discoveries, require culture that would give to it all the consideration and consequence now claimed for dentistry as a scientific pursuit.

The study of physics, chemistry and *materia-medica* in this view of dental surgery becomes of high importance. So also does an intimate knowledge of anatomy, physiology and the nature and treatment of disease generally. I do not fear to make the prediction that what is accomplished in this way, in the future, will be the work of more highly educated men than the general average of the present generation of dentists. But in order to accomplish anything of consequence in this direction, it becomes necessary that there should be concert of action between the men of the best class, now engaged in the practice of dentistry. There should be something more done than to meet from time to time, to read and loosely discuss essays upon subjects that have been examined from one point of view, until not a new idea remains to be uttered in relation to them. There are many important matters essential to the best practice not yet determined, about which there is great diversity of opinion. While men can never be forced to think alike on all sub-

jects, yet careful, concerted and systematic investigations, with recorded results of experience, will lead to harmony of views with regard to many important matters, about which men have differed and will differ, widely, when they discuss the questions relating to them in a loose manner. Nothing confirms a man so certainly in his opinions, no matter how frail the basis upon which they rest, as disputing about them.

Such work as this, gentlemen, it appears to me is worthy of your deepest interest, and in order that it should be efficient, it becomes necessary that we should give full scope to our general duties to our profession and to the public. These should never be neglected. While the demands upon our time and labor for our own personal objects are imperative, we should not allow ourselves to be confined to these. While charity may begin at home, it should not end there.

I cannot but hope and believe that our profession will advance to a much higher position than it now occupies. It has been said that it will grow and develop just as rapidly as there is a demand for a different and higher grade of culture. But its past history shows that its rapid development up to its present condition of practical usefulness has been, in a great measure attributable to the efforts of a small number of able and energetic men. It is impossible to estimate the influence which properly directed, energetic and persistent effort, of even a small number, can exert upon aggregations of individuals and upon communities. This, you comprehend; and some such action as this is contemplated by your organization. I trust that its influence will be exerted to its fullest extent, and will be widely felt for good. I am sure this will be the case, if you give to the general interests of your profession all

the aid that lies in your power and are careful that this is well directed. In any such effort you must command the sympathy and co-operation of every well-wisher of the dental profession.

But I cannot trespass upon your time in any attempt to state more fully (I wish I had the ability to do so more forcibly, if I could indulge in the effort,) the strong views I entertain of the great importance of this attention to the higher elements of the profession in which we are so deeply interested. Careful reflection must force the truth upon you that the course we are now pursuing has a tendency to retard intellectual development, in our calling, and by keeping it in a comparatively degraded position, to prevent, in a great measure the accession to its ranks of intelligent and cultivated men. This restricted course tends to a mental condition which raises a barrier to new and progressive views, if they are weighted with scientific thought.

It is best to avoid saying what is disagreeable; it is, however, sometimes necessary. It should be remembered that it is always salutary to rise above the region of self-satisfaction, to examine ourselves candidly and to look honestly and boldly at existing deficiencies. This is the only avenue to true progress.

